SaskPower

ENVIRONMENT REPORT 2004

A growing commitment

The Western red lily (*Lilium philadelphicum L. var. andinum*) was designated Saskatchewan's floral emblem in 1941. This beautiful wildflower finds its home in prairie meadows and grasslands, but is increasingly rare due to a loss of natural habitat.

Over the past four years, SaskPower's Shand Greenhouse has been researching propagation methods for the species. To mark Saskatchewan's centennial, more than 85,000 Western red lilies grown at the Shand Greenhouse will be distributed across the province in 2005.

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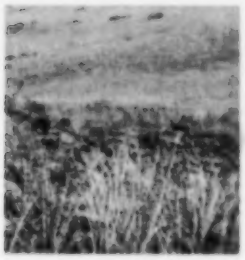
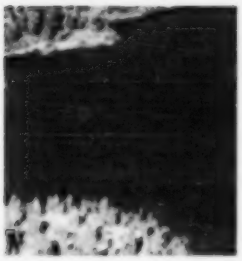
Highlights

- Construction begins on a 150-megawatt wind power project at Rushlake Creek in southwestern Saskatchewan
- An international mercury capture demonstration project begins at Poplar River Power Station
- Three project proposals are selected for the first phase of the Environmentally Preferred Power (EPP) Program
- The first phase of a biogas project is constructed near Cudworth, Saskatchewan
- A province-wide information campaign communicates the benefits of energy efficient lighting
- The second phase of a three-year $20-million overhaul of Nipawin Hydroelectric Station is complete
- The SaskPower Shand Greenhouse continues to produce and distribute approximately 500,000 seedlings annually
- A database of organic farmland is established to ensure herbicides are not in use adjacent to organic land
- Development continues on an advanced environmental screening tool
- A climate change exhibit is sponsored at the Saskatchewan Science Centre
- Independent audits of our Environmental Management System confirm the Corporation's registration under the demanding ISO 14001 Standard





Company profile

SaskPower is the principal supplier of electricity in Saskatchewan. Our mission is to deliver power in a safe, reliable, cost-effective and environmentally responsible manner. We operate in one of the largest service areas in Canada and possess the most extensive network of transmission and distribution lines in Western Canada. We manage a net generating capacity of 3,505 megawatts (MW), with the focus of recent additions being on environmentally sustainable and renewable energy sources.

- 439,165 Saskatchewan electricity customers
- 2,397 permanent full-time employees
- 8,048 kilowatt hours (kWh) average annual usage per residential customer
- 16,894 gigawatt hours (GWh) Saskatchewan electricity sales
- 2,954 MW (net) annual peak load

President's message

During 2004 we took the opportunity to celebrate a particularly special occasion – SaskPower's 75th year of service to Saskatchewan people. It was a proud and important anniversary. It allowed us the opportunity to reflect on our fundamental role in the province, and reinforced the immeasurable responsibility we have in providing electricity in a safe, reliable, cost-effective and environmentally responsible manner, now and into the future.

The story of our work as an electric utility is forever changing. Our corporate and community histories, however, tell us we are resilient and up to the test. We operate in what will always be a challenging situation – we provide a service that is essential to our daily lives, yet its production must be carefully managed to ensure it doesn't harm us. It is the perspective we gain from each passing year that is providing us with the knowledge and determination we require to maintain an appropriate course for sustainability.

The standards for environmental responsibility and effective stewardship are rapidly developing. As a result, we face the test of meeting the continued and growing demand for electricity, while addressing current and anticipated regulatory environmental requirements where none existed before.

Internally, SaskPower employees have used their expertise to work together in finding the necessary long-term and viable environmental solutions. Externally, our company is continuing to work in concert with customers, partners, regulators and various stakeholders to consider and address the total impact that the decisions we make have on our air, land and water. The net result of this collaborative approach – significant issues are resolved without affecting SaskPower's ability to effectively serve its customers.

Central to SaskPower's operational reality is the need to face the demand for a significantly reduced emissions future. We will have to balance the financial requirements of this certainty – costs that will ultimately be borne by our customers – in a way that ensures the long-term viability of our company. Both emerging and proven sources in our portfolio – wind, hydro, distributed generation, cogeneration, gas and coal – are accompanied by advantages and drawbacks. No single option offers an easy solution.

Our actions are driven by this awareness. In recent years, we have committed millions of dollars to such initiatives as constructing the Cypress Wind Power Facility; repowering Queen Elizabeth Power Station with natural gas combined cycle technology; and installing new and upgrading existing electrostatic precipitators at Boundary Dam Power Station. This year, SaskPower's focus on efficiency improvements continued at Nipawin Hydroelectric Station, while a groundbreaking mercury capture demonstration project began at Poplar River Power Station.

In the meantime, our long-term commitment to strengthening our generation portfolio with renewable sources is being reinforced with a major project that will make our province one of the largest producers of wind power in Canada. Construction of a 150-megawatt wind power development is now underway at Rushlake Creek in the southwestern area of the province. This exciting project is part of our sustainable energy supply plan and specifically, the Green Power Portfolio – designed to meet Saskatchewan's new electricity needs from now until 2010 through the use of environmentally friendly sources that do not create new greenhouse gas emissions.

The education and involvement of all environmental stakeholders – employees, customers, partners and regulatory agencies – will continue to be an essential part of our work in the months and years to come. This *Environment Report* is an important component of our efforts to identify courses of action and measure our ongoing performance. It is also a critical element of our commitment to collaborative and open decision-making at SaskPower.

Your ongoing interest and involvement are always welcomed, as are your views and feedback.

Pat Youzwa

Pat Youzwa
President and Chief Executive Officer

Continuous
improvement

Preparing for a sustainable future

As an electrical utility with a 75-year history of powering a province, SaskPower is a recognizable leader in providing an essential service that contributes to our standard of living, as well as social and economic development. As electrical consumption in Saskatchewan increased, generation capacity followed – from 10 megawatts (MW) in 1929 to over 3,000 MW in 2004.

Today, the production and use of electrical energy are two key global environmental concerns. And it's up to companies like SaskPower to join forces with employees, customers, government and community based interest groups to respond in a clear and comprehensive way to the challenge of reducing and mitigating the environmental impacts associated with electricity.

International, federal and provincial environmental standards and regulations are always evolving, as new science becomes available and new concerns are identified. Historically, SaskPower has concentrated on being responsive to these advancing trends. As a result, continuous improvement remains at the heart of our commitment to strong environmental performance. Extended planning horizons are vital in helping us prepare for a variety of scenarios. Our corporate environmental strategy revolves around the need to strike a balance between managing our existing operations through compliance and incorporating elements of forward-looking sustainable development into day-to-day activities and future planning.

The basic principles of SaskPower's program of environmental stewardship, hinging on a desire to meet societal expectations, can be described as:

1. Proactively identifying environmental opportunities and issues
2. Understanding the environmental and economic impacts of options
3. Actively and transparently communicating with employees, customers, regulators and the public
4. Ensuring regulators are informed of environmental impacts
5. Meeting environmental targets
6. Measuring and demonstrating compliance

Environmental Management System (EMS)

Our ISO 14001 EMS is the foundation of our pledge to continually improve our corporate environmental performance. In 2000, SaskPower became the first full-service electric utility in Canada to achieve corporate-wide ISO 14001 registration. This means that our EMS meets the rigorous standards set by the International Organization for Standardization (ISO), a non-governmental, worldwide federation of national standards bodies from 140 countries that works in partnership with international organizations, governments, industry, as well as business and consumer representatives.

The ISO 14001 Standard provides the necessary framework for environmental management, measurement, evaluation, and auditing of activities – with an underlying goal of continuous improvement. In total, 17 areas of SaskPower's environmental performance are monitored and evaluated. Within SaskPower, our EMS consists of eight distinct units, and includes generating stations, transmission and distribution facilities, as well as administrative groups that support operations. In 2004, all of these units maintained their registration following independent audits.

To ensure ongoing compliance with the ISO 14001 Standard, all new SaskPower employees attend EMS training; employees who have previously attended EMS training must renew their training every three years.

ENVIRONMENTAL SCREENING DATABASE MAPS OUR FUTURE

Evaluating the environmental impacts and legal requirements of new SaskPower projects will soon be made easier, thanks to a cutting-edge online environmental screening tool. It provides a snapshot of environmental concerns linked to any piece of land in the province – crucial information required when planning projects related to such things as power lines or generating facilities.

"This will be a powerful mapping instrument capable of many types of analysis, route planning, reference and screening options," says Josif Uras, environmental screening processes coordinator, SaskPower. "Never before has so much environmental information been included in one dynamic system."

Josif is based in the Corporation's Environmental Programs department and leads the project's cross-functional team. Members have been working together to develop a screening tool capable of using Geographic Information System (GIS) technology to combine more than 50 different layers of environmental information on one easy-to-read screen. The data comes from provincial, federal and non-governmental organizations responsible for fish and wildlife habitat, rare and endangered plants and animals, terrain, parks, protected areas, heritage sites and other environmental issues.

To make it easier for SaskPower users, information in the screening tool is presented in a colour-coded format, with each colour linked to a specific piece of legislation or regulation. The screening tool can also guide the user through a step-by-step procedure for dealing with any environmental concerns that do emerge.

"We've tried to build it so it is a one-stop shopping centre for new project assessment," says Josif. Because any updates to legislation or regulations are automatically incorporated, he points out that employees won't have to second guess if the information they are using is current. This is especially important in an era when the *Species at Risk Act* (SARA) and other environmental legislation are changing faster than ever.

"With this development, SaskPower has come a long way from the days when table-sized documents were spread out and employees cross-referenced maps against printed copies of legislation," says Stan Saylor, supervisor of environmental studies, SaskPower. "By reducing the time needed to process new projects, the screening tool will also help save money and resources which can be directed to other environmental initiatives." The completed environmental screening tool is expected to be in place across SaskPower in 2006.

Josif Uras

Measuring performance

Based on the results of internal and external audits of our EMS, as well as management review, the following were notable improvements in SaskPower's environmental performance in 2004. Each is reported by registrable unit.

- Boundary Dam Power Station developed site specific spill response training and established a plan to train employees.
- Shand Power Station reached a targeted objective to reduce chemical consumption through process improvements.
- Corporate support groups continued to identify potential environmental issues associated with new projects. For example, the Cypress Wind Power Facility was incorporated into our EMS in 2004.

EMS representatives from all registrable units continue to meet and share ideas for improvement and consistency. This year, an auditor from Nova Scotia Power participated in our internal audit process, while one of our internal auditors participated in audits at Nova Scotia Power.

Corporate governance

In addition to the structured activities created by SaskPower's EMS, the Environment, Occupational Health and Safety Committee of the SaskPower Board of Directors also helps to guide the Corporation's environmental focus. The Committee ensures our company proactively addresses environmental issues and is in compliance with regulatory and legislative requirements. It also monitors corporate standards; reports on trends and public policy issues; reviews emergency response procedures; and recommends policies and actions.

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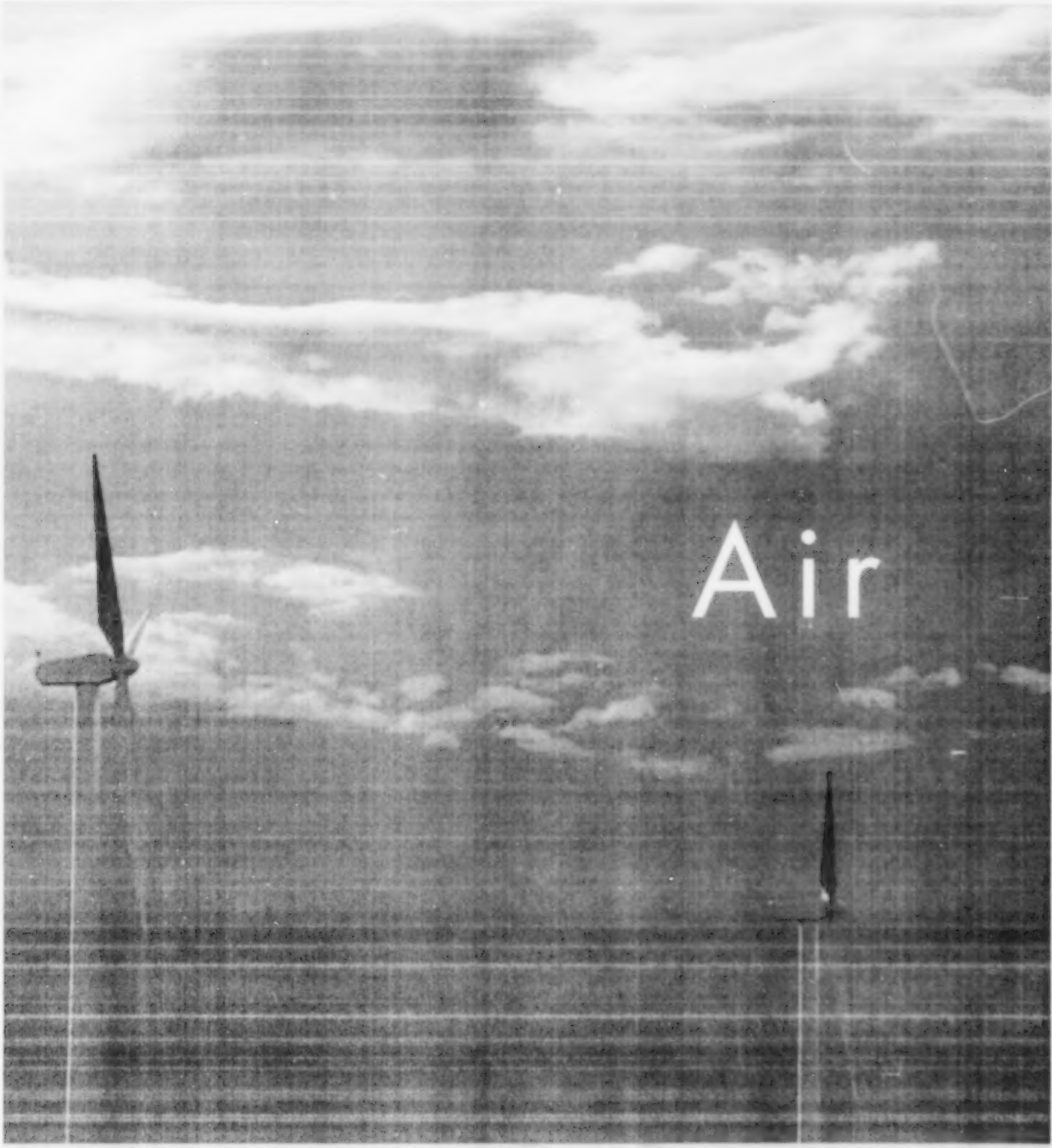

Air

Green Power Portfolio

SaskPower's Green Power Portfolio is a unique strategy designed to ensure that all of Saskatchewan's new electricity needs until 2010 are met from environmentally friendly sources that do not add to greenhouse gas (GHG) emissions. Our Environmentally Preferred Power (EPP) Program, energy conservation programs, distributed generation projects, small-scale hydro and wind power are all potential options for the future supply of electricity in the province.

Wind

SaskPower International, a wholly-owned subsidiary of SaskPower, is developing a 150-megawatt (MW) wind power project at Rushlake Creek in southwest Saskatchewan. Estimated to cost approximately $244 million, when completed in 2005 the project is expected to generate enough zero emission energy to meet the electrical needs of approximately 64,000 homes. SaskPower will also be required to spend an additional $28 million on a collection system and transmission facilities to bring this capacity into the Corporation's grid system. Construction began in October with upgrades to municipal roads, while the turbine supply and installation contract was awarded to Vestas-Canadian Wind Technology, Inc.

SaskPower has been using wind power in its generation fleet since June 2002, when it began purchasing power from the SunBridge Wind Power Project. This Independent Power Producer (IPP) delivers approximately 11 MW of electricity from 17 turbines. The Corporation commissioned its own development – the 6-MW Cypress Wind Power Facility – in late 2002. In 2003, seven more wind turbines (totalling 4.62 MW) were added.

As we evaluate generation options into the future, SaskPower will continue to pursue wind power where it makes economic and environmental sense. While wind power technologies continue to improve in performance and cost, transmission system limitations, as well as ideal wind characteristics, will limit the degree to which they can address the long-term energy needs of the province.

Distributed generation (DG)

DG describes the process of producing electricity on a small scale, usually sited at the location where the power will be used. In addition to generating electricity, some DG projects offer important environmental benefits by using traditional waste streams as a source of fuel while waste heat is recovered from the generating equipment.

SaskPower is pursuing demonstration DG projects in order to evaluate a range of emerging technologies, test their feasibility in a Saskatchewan context, and showcase opportunities to potential private sector partners.

Current DG initiatives include:

- A project with Clear-Green Environmental Inc. to operate a facility that creates biogas from a manure digester, located at a hog facility near Cudworth, Saskatchewan. SaskPower is supplying microturbine units that use the biogas to generate up to 120 kilowatts (kW) of electrical energy.
- A partnership with the Zelensky Brothers Sawmill to construct a facility near La Ronge, Saskatchewan, that will turn wood residue into heat and electricity.
- A solar power installation at the Saskatchewan Science Centre.
- An alliance with the Regina Qu'Appelle Health Region and SaskEnergy on a cogeneration development at the Regina General Hospital.
- A collaborative project with SaskEnergy and Flatland Exploration Ltd. using flare gas from oil wells to generate electricity.

PIONEERING A RENEWABLE ENERGY PROJECT

Construction is complete on Saskatchewan's first demonstration project that uses animal waste streams to generate electricity. The new biogas facility is the result of a partnership between SaskPower, Clear-Green Environmental Inc. and Cudworth Pork Investors Group. Located near Cudworth, Saskatchewan, the distributed generation (DG) project is exploring the use of methane produced by hog manure to create electricity and heat.

"We're excited about this project because it represents an opportunity to help fill the need for alternative energy while simultaneously reducing waste," says Ben Voss, president and CEO, Clear-Green Environmental Inc. "We're bringing together European-based technology developed over the last 30 years, and using our own research and development to make it a fit for Saskatchewan."

The DG demonstration facility is channeling manure into a digester tank, where bacteria feed on the organic matter to produce biogas. The methane is drawn off and piped into four microturbines. Up to 120 kilowatts (kW) of electricity is created – enough to power 30 homes. Meanwhile, waste heat is captured by the microturbines and used in the digester operation, while remaining solids are kept for fertilizer.

"Organic waste has become a significant challenge worldwide," says Ben. "Agriculture has been identified as one of the key areas available for Canada to meet its Kyoto targets. With projects like this, not only can we reduce methane emissions and our dependency on fossil fuels, we can also work towards becoming a net exporter of emissions reductions or greenhouse gas credits."

This is the fifth DG project underway in Saskatchewan. SaskPower is also partnered with Flatland Exploration Ltd. and SaskEnergy in a development investigating the feasibility of using flare gas – produced during oil and gas extraction – to fuel microturbines. SaskPower and SaskEnergy are also partners in a project using microturbines at the Regina General Hospital to generate heat and electricity. Additional projects include a solar power installation at the Saskatchewan Science Centre and a partnership with Zelensky Brothers Sawmill to construct a biomass facility near La Ronge, Saskatchewan.

Ben Voss

Environmentally Preferred Power (EPP)

Our EPP Program provides the opportunity for IPPs to build and operate smaller-scale, environmentally progressive generation projects and sell electricity to the Corporation. Eligible technologies include wind, low-impact hydro, biomass, solar, flare gas and heat recovery from existing waste heat sources. It will ultimately result in 45 MW of additional capacity made available to SaskPower's system.

In 2004, after reviewing a wide range of proposals with a mix of technologies, SaskPower selected three projects totalling 13 MW in the first phase of the program. By the end of the year, negotiations were underway with the selected proponents: Windswept Power Incorporated and WindWorks Energy Corporation (wind turbine projects), as well as Alliance Pipeline (heat recovery). In 2005, SaskPower is planning to issue the second solicitation for another 32 MW of EPP.

Energy efficiency and conservation

SaskPower is also reducing GHG emissions produced at generating stations by working directly with customers – both large and small – to help them reduce electrical use. It not only makes good sense for the environment, it's also a smart financial decision. By helping residential, agricultural and industrial customers use less electricity, we're delaying the need to build more high-cost electrical generation facilities. We're also helping our customers save money by reducing their operating expenses.

Energy Performance Contracting (EPC) Our EPC service, a component of SaskPower Energy Solutions, assists larger customers in lowering energy consumption. New energy efficient equipment and components are installed in existing facilities, with the savings from lower electricity, water and natural gas bills used to offset the retrofit costs. The Corporation is promoting the EPC service to school divisions, the provincial health care sector and commercial businesses.

In 2004, EPC customers reduced their GHG emissions by 20,000 tonnes of carbon dioxide (CO_2). SaskPower worked with two new school divisions and two new commercial customers to design and begin implementation of projects on 16 additional buildings. For the 2000-2004 period, the Corporation led 11 projects with $25 million in project construction. The initiatives led to customer savings of $2.8 million, through reducing electricity use by 20.5 gigawatt hours (GWh) and natural gas use by 3.2 million m^3. In addition, the projects generated 24 million kilograms/year of CO_2 reductions.

Community Energy Management Service (CEMS) In 2004, Watrous, Saskatchewan, continued as the pilot location for a CEMS feasibility study. SaskPower's CEMS assists the town with an energy audit and recommends energy conservation measures. It also provides logistical support for the installation of energy efficient lighting, motors and system controls in facilities such as the local ice rink, community centre, water treatment plant and municipal office.

During the year, the Saskatchewan Research Council (SRC) conducted an extensive energy audit on Town of Watrous facilities. Based on existing energy usage levels, the audit findings allowed SRC and SaskPower to recommend a set of energy conservation

GreenPower

The expansion of SaskPower's Cypress Wind Power Facility was directly driven by ongoing support for our GreenPower product, which provides customers with the opportunity to support the development of EcoLogo-certified renewable energy in Saskatchewan. For a small premium, customers have the option of purchasing a 100 kilowatt-hour (kWh) block of GreenPower per month. This purchase has the equivalent environmental benefit of planting about 200 trees over the course of a year. The Government of Canada, Government of Saskatchewan, SaskTel, University of Regina and Hitachi Canada have all made commitments to purchase GreenPower, while SaskPower is using the product to meet the equivalent of all the electrical needs for our Head Office.

measures with the intent that potential energy savings could be used to offset the capital cost of installing energy efficient equipment. Implementation of the measures is expected to begin in 2005. SaskPower will review the results of the Watrous project to determine whether it is feasible to establish a broader CEMS program.

Power savings campaign A cornerstone of our commitment to environmental responsibility is providing our customers with information and tools so that they can take steps in their day-to-day lives that will help reduce their own electrical consumption. In the fall of 2004, SaskPower launched a province-wide power savings campaign to share tips on how customers can save electricity and reduce their power bill while helping the environment.

In the first phase of the campaign, Saskatchewan residents are being encouraged to replace traditional incandescent light bulbs with high-efficiency, longer-lasting compact fluorescent lights (CFLs). With household lighting accounting for approximately 20 per cent of an average homeowner's power bill, switching to CFLs can have a direct impact on lowering customers' power costs. CFLs use up to 75 per cent less energy than traditional incandescent bulbs to produce the equivalent amount of light, and last up to 10 times longer.

SaskPower Customer Services staff also participated in community outreach programming by appearing at 10 trade shows in locations throughout Saskatchewan. Staff shared information with customers on our GreenPower product and energy efficiency initiatives, while highlighting the many programs underway throughout the Corporation that minimize the impact of our operations on the environment.

EnergyCheck SaskPower's interactive online home energy audit, EnergyCheck, is available at saskpower.com. In 2004, more than 2,100 audits were completed. By participating, Saskatchewan residents are receiving personalized information on how to conserve energy, reduce GHG emissions and save money on their energy bills.

Education programs

SaskPower engages in a wide range of partnerships and activities with customers and youth to raise awareness about climate change. The Corporation is a participant in Climate Change Saskatchewan, a group of government and academic partners which is committed to delivering clear and comprehensive information about climate change to residents across the province. In the summer of 2004, a corporate sponsorship by SaskPower helped bring *The Climate Change Show* travelling exhibit to the Saskatchewan Science Centre. Exhibits provided important background on climate change and projections of changes to our landscape that may result.

Meanwhile, the SaskPower Shand Greenhouse, in cooperation with SaskPower Environmental Programs, has developed a 45-minute presentation about electrical production in Saskatchewan. The *Energy and Our Environment* presentation is aimed at grades four, five and six audiences, and challenges children to think about how they use electricity and what actions they can take to reduce its impact on our environment. During the year, the presentation was delivered to more than 2,200 students in 68 schools across the province.

SaskPower also provides key financial support for Destination Conservation Saskatchewan (DCS), which is co-sponsored by SaskEnergy. Delivered in schools by the Saskatchewan Environmental Society, DCS is student-driven and activity based, with an emphasis on environmental awareness and energy conservation. It promotes sustainability by helping schools conserve resources and protect the environment, and is an integral part of SaskPower's EPC service for Saskatchewan school divisions.

Also, in 2004 a new SaskPower Sustainable Energy Brochure was developed that highlights SaskPower's efforts to minimize GHG emissions through our Green Power Portfolio. Timely information on environmental achievements and challenges is also available through saskpower.com.

Small power producers

As interest in environmentally responsible generation grows – and technology to generate electricity on a small scale improves – more and more customers are investigating ways to generate their own electricity. SaskPower's Small Power Producers Policy accommodates customers who wish to generate up to 100 kW of electricity for the purpose of offsetting power that would otherwise be purchased from SaskPower. This policy applies to wind and solar-powered facilities and other viable generating sources. SaskPower will purchase excess energy based on our average variable cost of electricity.

Meanwhile, the Alternative Farm Energy Solar or Wind-Powered Livestock Water Pumping Incentive Program offers a grant toward the purchase and installation of a solar or wind-powered water pumping system for farm livestock.

Emissions – imminent challenges

The immediate future of GHG regulation – both in Canada and internationally – continues to be uncertain. However, mandatory carbon constraints appear probable in the long term. At the regulatory level, SaskPower has been active in discussions with the provincial and federal governments while both jurisdictions work to establish policies in this area.

In the midst of this unsettled atmosphere, the Corporation is faced with an immense challenge. It must continually review the prudence of investing in larger-scaled GHG emission reductions – as well as avoidance or capture technologies – when regulations have not been solidified and technology continues to evolve at a rapid pace. In response, SaskPower is devoting significant resources to the development of a sustainable supply plan in order to address the challenge of making long-term decisions about generating assets that will likely be in use for the next 30-40 years.

Our sustainable supply planning group continues to monitor a number of different technological solutions. Meanwhile, the Green Power Portfolio will make it feasible to continue this monitoring work by addressing short-term supply needs. No matter what mix of technology is ultimately chosen, it is likely to represent a significant expense. For example, the costs of using retrofits to capture CO_2 from flue gases at existing coal-fired generating stations will likely raise the cost of electricity significantly. These new technologies also increase the energy used by the generating stations.

In the immediate future, SaskPower has elected not to pursue GHG credit trading.

Clean coal

With Saskatchewan's abundant lignite coal reserves providing a secure, low-cost and price stable fuel source, it is important for SaskPower to determine the feasibility of clean coal electrical generation in Saskatchewan. Much effort is being invested into assessing the viability of clean coal generating facilities as a way to reduce or even eliminate GHG emissions from the Corporation's facilities.

SaskPower is developing a design concept for an advanced combustion clean coal unit that would meet or better existing emissions regulations and operate at a higher rate of efficiency. The unit will be able to accommodate a retrofit to achieve near-zero emissions as the need for carbon management develops further. Other options being investigated include post-combustion cleanup technologies, as well as processes that turn coal into a synthetic gas burned as a fuel. This gasification method offers promise for higher efficiencies and more cost-effective emissions control.

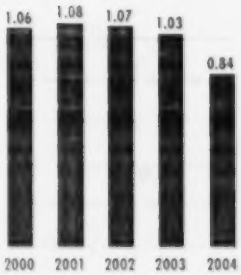
SaskPower is a founding member of the Canadian Clean Power Coalition (CCPC), a consortium of utilities seeking innovative ways to burn coal cleanly. The group is working on Phase II of a program that will lead to the selection of a technology option and business case for the construction of a demonstration plant. A SaskPower employee has been seconded to the CCPC as its Executive Director.

Meanwhile, the University of Regina's International Test Centre (ITC) for Carbon Dioxide Capture is focused on developing amine scrubbing technologies that would remove CO_2 from coal combustion emissions. SaskPower is hosting a demonstration project at Boundary Dam Power Station, near Estevan, Saskatchewan. The ITC continues to work on improving solvents to reduce the energy input required, as well as reducing corrosion levels so that less expensive materials may be used for construction. SaskPower is also part of the Canada Centre for Mineral and Energy Technology (CANMET) CO_2 Consortium. This partnership is using the laboratories of Natural Resources Canada to advance an oxy fuel process for the capture of CO_2. The current focus is on the design of a power plant that is "capture ready."

The Weyburn Carbon Dioxide Monitoring Project is a joint research undertaking with the International Energy Agency and EnCana. CO_2, recovered from a gasification plant in North Dakota, is injected into the ground for enhanced oil recovery. The program is entering its second phase with an emphasis on risk assessment for long-term CO_2 storage. SaskPower is committed to further strengthening its ties with North Dakota, where lignite coal similar to that found in Saskatchewan is used for power production. The Corporation has joined the Lignite Energy Council and the Plains CO_2 Reduction Partnership to work on issues common to all parties.

In addition, SaskPower has been leading a cross-sectoral group investigating the possibilities for polygeneration in Saskatchewan. Polygeneration includes the combined production of electricity, heat or cooling services, as well as petrochemical products. This can involve multiple input resource streams and multiple output or product streams. In January 2004, the Corporation hosted a workshop to pursue the exploration of synergies related to this initiative and has initiated discussions with Saskatchewan industries to examine the possibility for project development. SaskPower is also involved in several smaller scale studies, including the investigation of CO_2 sequestration sites in Saskatchewan and research into additional emissions control technologies.

Net CO_2 emissions per unit of fossil-based generation – kg/kWh



SaskPower GHG offsets

The Kyoto Protocol incorporates the use of credits or offsets to provide a way to achieve greenhouse gas (GHG) emission reductions. SaskPower's unverified 2004 GHG offsets, measured in tonnes of carbon dioxide (CO_2), include:

Flyash - 48,596 tonnes Flyash is a fine ash that is a byproduct of burning finely pulverized coal in thermal power stations. It is sold for use in ready mix concrete, mine backfill, oil well cementing, road base stabilization, highway improvement and oil well site environmental applications. The flyash offsets assume that by selling flyash, we are offsetting cement manufacture.

GEMCo Norseman Landfill Gas Project - 1,665 tonnes Through the Greenhouse Emissions Management Consortium (GEMCo), SaskPower is contracting for GHG reductions resulting from a landfill gas capture project in Surrey, British Columbia.

Old Man on His Back Prairie and Heritage Conservation Area - 50,000 tonnes SaskPower and the Nature Conservancy of Canada partnered to create the 5,300 hectare Old Man on His Back Prairie and Heritage Conservation Area in southern Saskatchewan. The undisturbed native grasslands capture CO_2 from the atmosphere and store it in the soil.

Forest Carbon Sequestration Agreement – 2.2 million tonnes As a result of a partnership between SaskPower and Saskatchewan Environment initiated in 1999, this project offsets GHG emissions by establishing more than 500,000 hectares of forest carbon reserves and the planting of five million tree seedlings. The joint venture received third party endorsement from the Greenhouse Emission Reduction Trading (GERT) Pilot in 2002.

Net SO_2 emissions per unit of fossil-based generation – g/kWh

Net NO_x emissions per unit of fossil-based generation – g/kWh

Fossil fuel consumption

Mercury emissions

SaskPower is responding to growing concerns about mercury emissions from coal-fired generating stations by initiating a comprehensive research and development project to explore options for mercury capture. Mercury has been characterized as toxic under the *Canadian Environmental Protection Act* (CEPA). Although new regulations are being developed, no commercial technology exists for mercury removal from lignite-fired facilities.

As a result, the Corporation is engaging in advanced research at the SaskPower Environmental Control Research Facility (ECRF), situated at the Poplar River Power Station. Commissioned in 2004, it is being used to develop technologies for the capture of mercury from coal-fired power plant exhaust gases and will provide an opportunity to evaluate technology under a variety of real-world operating conditions. This $5.9-million project is sited at Poplar River Power Station in part because it emits more mercury on a unit generation basis than SaskPower's other coal-fired generating stations.

The project is testing the feasibility of using activated carbon injection to address the unique challenge of capturing mercury from the relatively high mercury lignite coal that is found in Saskatchewan. The Energy and Environmental Research Centre at the University of North Dakota is a partner in the test. SaskPower is also supporting a North Dakota test of coal quality enhancement technologies that are investigating the feasibility of producing a drier coal, which could help create additional reductions of mercury, particulate matter and sulphur dioxide (SO_2).

Allowing time for mercury data collection, analysis and the design of solutions, it is anticipated that permanent control equipment could be in place at critical SaskPower facilities to meet pending regulations by 2010. Due to unique operating conditions and environmental issues, individual solutions for mercury capture will likely have to be developed for each of SaskPower's three coal-fired generating stations. Any new technologies will also have to take into consideration efforts to capture other emissions of concern; at present, several mercury capture technologies already in development actually increase CO_2 emissions. Our research and development work in mercury capture is being coordinated closely with Saskatchewan Environment, as an extension of the initial partnership established between the two organizations in 1998.

Other emissions

SaskPower is also taking proactive steps to manage other emissions – not considered greenhouse gases – from our generating stations:

SO_2 emissions SO_2 emissions are dependent on various factors, including the amount of fuel consumed, fuel sulphur content and the operational efficiency of emission control technology.

Nitrogen oxide (NO_X) emissions NO_X emissions are produced by the combustion of fossil fuels – including coal – in the presence of air, which is predominantly nitrogen.

Internal energy efficiency

Three internal energy indicators measure the efficiency of the three major phases of electricity delivery – generation, transmission and distribution. This essentially constitutes the amount of electricity used and/or lost in each of the phases. The energy conversion percentage for 2004 is consistent with past performance, and within historical normal variables. A slight increase (six per cent) in coal inputs and a drop in gas inputs (-17 per cent) contributed to the slight decline in total output. Generating activities in 2004 that improved energy efficiencies included:

Hydroelectric generation Nipawin Hydroelectric Station Unit #1 had a complete rebuild in 2003, which will lead to improved performance in the future (additional electrical energy was not recorded in 2004, due to low water flows). Nipawin Hydroelectric Station Unit #3 underwent a complete rebuild in 2004, which is expected to positively affect the unit's operation in 2005.

Fossil fuel generation Efforts to improve energy efficiency at generating stations include a major overhaul and rebuild of the coal-fired Boundary Dam Power Station Unit #6 that took place in 2003. The rebuild resulted in an 11 per cent increase in generation for the unit compared to the previous year. More than half of that increased generation can be attributed to improved unit reliability resulting from the rebuild; the unit's ability to produce more energy with the same amount of fuel (due to an improved heat rate) contributed in a smaller way to the increased generation. Unit #5 at Boundary Dam Power Station had a major overhaul in 2004; the positive energy efficiency results from this overhaul are expected to be reflected in 2005 statistics.

Renewable generation Seven more wind turbines were added at the Moore Creek site of the Cypress Wind Power Facility in 2003. These turbines came online in December 2003, and were producing energy for the entire year in 2004.

Internal energy efficiency – %

	2004	2003	2002	2001	2000
Generation	**94.1**	94.6	93.6	93.3	93.6
Transmission	**95.5**	95.8	95.2	95.4	95.0
Distribution	**95.0**	95.3	94.8	95.0	94.4

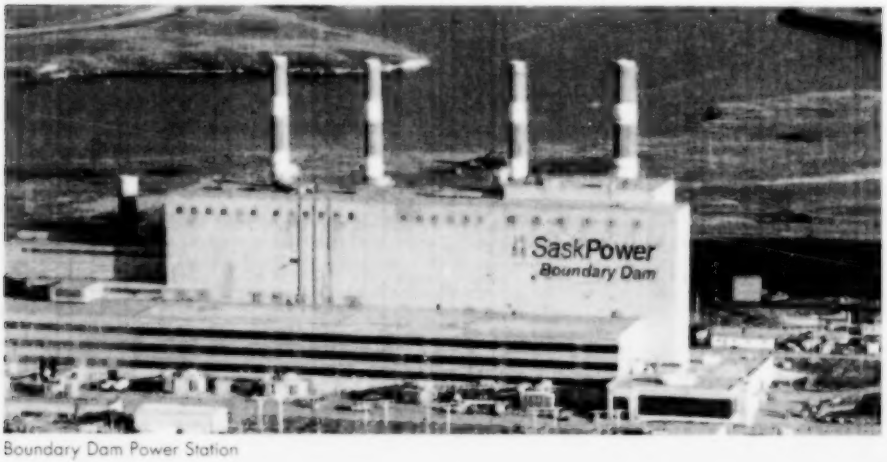
Flyash produced which was sold for third party use – %

Flyash

This was the first full year of operation for new and upgraded electrostatic precipitators (ESPs) at SaskPower's Boundary Dam Power Station, our largest coal-fired generating station. The five-year, $70-million project resulted in the installation of ESPs on five generating units, as well as the upgrade of the existing ESP on Unit #6. Flyash is a fine ash that is a byproduct of burning finely pulverized coal in thermal power stations.

Utilizing electrostatic charges, the ESPs now collect and trap over 99 per cent of flyash produced by Boundary Dam. This project arose as a result of an innovative partnership between SaskPower and Saskatchewan Environment. Through a collaborative approach, SaskPower has been able to prioritize targets based on an assessment of the most critical environmental issues.

An additional benefit of the Boundary Dam project is that the ESPs have increased the amount of flyash available for sale to the private sector. In 2004, SaskPower International sold approximately 14 per cent of all the flyash produced by Boundary Dam Power Station and Shand Power Station. Flyash is used in a variety of applications, including ready mix concrete, mine backfill, oil well cementing and oil well site environmental applications. SaskPower International also continues to provide flyash to a Saskatchewan-based company involved in a provincial highway improvement project (road base stabilization). Flyash is blended with other materials and used to strengthen thin membrane surfaced (TMS) roads, commonly referred to as secondary highways, across the province.



Boundary Dam Power Station

Land

Screenings, assessments and project approvals

As an integral component of our Environmental Management System (EMS) and to ensure compliance with all legislative requirements, SaskPower continually conducts internal screenings of generation, transmission and distribution projects. If there is any probability that environmentally sensitive lands, habitats, species or archaeological sites will be affected by development, project plans are forwarded to SaskPower Environmental Programs for assessment in detail. The assessment may determine that legal approvals and permits are required, the development area in whole or part must be field inspected, an environmental protection plan must be implemented, or that other actions are required.

Project referrals and field assessments – 2004

	Referrals	Assessments
Generation	2	4*
Transmission	2	8*
Distribution	383	38*
Other	5	3
Total	392	53*

* Includes fieldwork conducted in 2004 for projects referred to Environmental Programs in previous years.

Major projects

150-MW wind power project at Rushlake Creek In 2004, SaskPower and SaskPower International received environmental approval from the provincial and federal governments for this project, to be located southeast of Swift Current in the R.M. of Coulee. An interdisciplinary environmental approval team reviewed and addressed potential consequences of the development on natural prairie; wildlife and plant species at risk; common wildlife species; migratory birds; fisheries habitat; heritage sites; noise; and aesthetics. The project's cumulative effects and specific landowner concerns were also addressed. In order to verify predicted results, a two-year study of potential migratory bird impact will commence in 2006.

Parkridge Tap SaskPower required a new 72-138 kiloVolt (kV) substation to increase system reliability for the City of Regina. This necessitates construction of a new 138 kV transmission line about eight km in length immediately east of Regina to connect the new Parkridge Substation to the existing grid system. Potential environmental impacts for both the new substation and transmission line will be negligible, as all development will be on previously disturbed land including road allowances. Environmental approval for the project was achieved in November 2004. The transmission line will be completed in the spring of 2005.

ML3 Stage 4 To ensure reliable service to communities in northwestern Saskatchewan – such as Beauval, La Loche and Buffalo Narrows – the existing transmission line from Meadow Lake to Green Lake requires rebuilding to 138 kV capacity. In 2004, SaskPower was granted environmental approval for its line route. The Corporation will implement a comprehensive environmental protection program approved by provincial and federal regulators that will protect sensitive terrain and fisheries habitat, as well as minimize waterfowl impact. Following project completion, SaskPower will conduct a two-year migratory bird impact study.

PLANTING THE SEEDS OF PARTNERSHIP

Rodney Sidloski, the CEO of HELP International, knows what he's looking for in a partner for his organization's environmental reclamation projects: "If the spirit is right in people, you can achieve all sorts of things that others once thought unachievable." And in Rodney's opinion, nobody fits that description better than Marty Lelliott, manager of SaskPower's Shand Greenhouse.

Marty and Rodney are deeply committed to finding ways to help preserve our natural environment. It's a passion that has fueled the development of HELP's Carbon Sequestration and Phytoremediation Project in southcentral Saskatchewan. High-water use trees provided to HELP from the greenhouse have been planted around sewage lagoons and landfills in municipalities to prevent contamination from these sites reaching nearby rivers and underground aquifers. In total, SaskPower's Shand Greenhouse has provided $25,000 as well as 65,000 tree seedlings.

"Supporting HELP is an important part of the greenhouse's vision," says Marty. "We are committed to help promote environmental education and awareness not only among our customers, but also among employees. They're important ambassadors who can help spread the message about SaskPower's commitment to environmental stewardship across the province."

Rodney says the greenhouse's involvement is vital because it goes further than simply providing seedlings. He says the partnership is helping shine a light on an innovative project: "We're trying to go beyond a mere program and evolve into a movement to protect and preserve the environment."

The SaskPower Shand Greenhouse is also supporting two other HELP International initiatives in southern Saskatchewan. The Souris River and Farm Protection Program will see 265,000 Shand Greenhouse-produced trees planted along the Souris River and Long Creek Watersheds to protect important riparian areas. Meanwhile, HELP International's Zero Waste Program for schools brings students together for day camps to learn about a zero waste lifestyle.

"Attitude can kill a tree in the best conditions, or make it grow in the worst conditions," says Rodney. "The SaskPower Shand Greenhouse gives us the moral energy to proceed."

Rodney Sidloski

Site assessments

SaskPower conducts site assessments prior to the sale, purchase or lease of property, or as a result of investigations indicating the potential for contamination. If necessary, we initiate site remediation after the assessment has been completed.

Birch Hills district service building The Birch Hills district service building, SaskPower's local service depot since 1977, is no longer required. Prior to the Corporation's purchase of the property, the building served as a retail gas station with underground fuel tanks. In 2004, a preliminary assessment identified one location with subsurface petroleum hydrocarbon contamination, as well as a few surface locations with concentrations of copper and zinc above soil quality guidelines. Further assessment is planned for 2005.

Dalmeny 72-25 kV substation A site assessment identified petroleum hydrocarbons and boron in the surface soils that were above acceptable criteria. In accordance with the clean-up plan approved by Saskatchewan Environment, the petroleum hydrocarbon contaminated soil was excavated and placed in the City of Saskatoon landfill for landfarming. The boron contaminated soil was combined with the petroleum hydrocarbon contaminated soil prior to transport to the Saskatoon landfill.

Glaslyn 72-25 kV substation This substation was decommissioned in 2003. A site assessment identified petroleum hydrocarbons and chromium in the surface soils that were above acceptable criteria. The clean-up plan prepared by SaskPower was approved by Saskatchewan Environment in 2004. The petroleum hydrocarbon contaminated soil was excavated and placed in the City of North Battleford landfill for landfarming. The chromium contaminated soil was combined with the petroleum hydrocarbon contaminated soil prior to transport to the North Battleford landfill.

Gull Lake district service building The district service building in Gull Lake was the site of a diesel-fuelled power station. A site assessment of the building and property, conducted in 2003, identified an underground storage tank below the concrete floor in the building. SaskPower's proposal to decommission the tank on-site was approved by Saskatchewan Environment. The tank was cleaned of its contents and sealed.

Kenaston town substation A site assessment conducted at the former town substation in Kenaston identified lead in the surface soils that was above acceptable criteria. A clean-up plan was prepared and subsequently approved by Saskatchewan Environment. The lead contaminated soil was excavated and disposed of in the City of Saskatoon landfill.

Regina service centre Subsurface petroleum hydrocarbon contamination was identified at SaskPower's Regina service centre during replacement of a water line in 2003. The contamination was located in an area where three underground fuel tanks were removed in the 1980s. The contaminated soil adjacent to the water line was removed in 2003 and further assessment of the former fuel storage area was conducted in 2004. The remaining concentrations of petroleum hydrocarbons were found to be within the applicable soil quality criteria. No further investigation or remedial action is required.

Regina substations SaskPower is considering releasing some land at an electrical substation adjacent to Powerhouse Drive for use as parkland within Regina's Wascana Centre. SaskPower began assessing these areas for contaminants in 2004. The assessment is planned to be completed in 2005.

Rosthern district service building A diesel-fuelled power station was located on the former Rosthern district service building property. A preliminary assessment of the site identified concentrations of petroleum hydrocarbons exceeding criteria in the subsurface soil. Delineation of the contamination in 2004 identified a total of approximately 1,500 m^3 of affected soil on the property and on the adjacent properties to the south and east. Elevated concentrations of arsenic have also been identified in the shallow groundwater. In 2005, further work on remediation options will be conducted.

Sintaluta town substation A site assessment conducted in 2003 identified chromium concentrations in the surface soils that were above soil quality guidelines. In accordance with a clean-up plan approved by Saskatchewan Environment, the chromium contaminated soil was excavated and placed in the town landfill for disposal.

Other assessments Eight properties were assessed prior to being released for sale or returned to the lessor, including substations, regulator stations, warehouses, and offices. Soil samples collected at the properties were analyzed for polychlorinated biphenyls (PCBs), hydrocarbons, metals, and where necessary, pentachlorophenol (PCP) and creosote. At some substations, wipe samples were collected from the transformer pads for PCB analysis. The site assessments identified one site that required remediation in 2004 before the property was released.

In addition, 11 properties were assessed prior to finalizing the lease or purchase agreements. Ten other assessments were completed related to new construction on existing SaskPower property or decommissioning activities on property that is to be retained by SaskPower. Hydrocarbon contamination found at three of these sites will be addressed in 2005.

Spills

Current provincial legislation requires that spills of hazardous substances be reported to Saskatchewan Environment. Legislation defines a spill by type, volume and location. SaskPower had 17 reportable spills in 2004. The impact of 15 spills was either negligible or mitigated as appropriate. Assessment of two of the spills is not complete.

Reportable spills - number

	2004	2003	2002	2001	2000
Oil spills	**6**	5	10	4	9
PCB contaminated oil spills (<50ppm)	**6**	5	7	5	7
Other spills	**5**	4	5	3	7
Total spills	**17**	14	22	12	23

PCB management

PCBs are synthetic compounds that were used in cooling and insulating fluids for certain electrical equipment manufactured prior to the 1980s. Although petroleum oil is the typical cooling and insulating fluid used in electrical equipment, some of it is contaminated with PCBs because of past practices. As a result, the oil in a small percentage of SaskPower's electrical equipment remains contaminated with PCBs. Due to potential adverse effects if the oil is released into the environment, SaskPower follows special handling, storage and disposal procedures when working with materials or equipment contaminated with PCBs.

Insulating oil reused and recycled – %

Insulating oil

Oil is used as an insulator and coolant in some SaskPower equipment. The Corporation reuses much of this insulating oil.

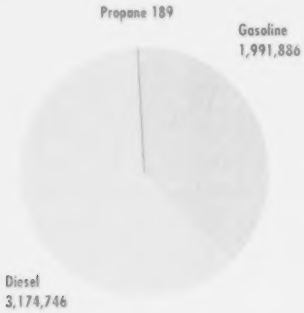
Transportation management

SaskPower's Fleet Services is continually researching environmental advances in technology. An area of special focus is the monitoring of advances in alternative fuels, such as natural gas. At present, SaskPower is continuing to investigate the feasibility of using natural gas vehicles. Their limited range, as well as a lack of fueling stations outside of urban settings, remain the biggest challenges.

In September 2004, as part of a pilot with Saskatchewan Property Management, SaskPower added three gas-electric hybrid trucks to our fleet. The three-year project will gather data on the effectiveness of hybrids in a variety of Saskatchewan work settings, including city and highway uses. Initial indications are that hybrids hold some promise for future integration into our fleet, although maintenance and repair service in non-urban areas may be an issue.

Fleet Services continually monitors the performance of our entire gasoline and diesel fleet with a focus on light duty vehicles. To date, current trends and experiences indicate that our diesel and gasoline units have basically the same fuel economies when averaged over applications, ages of assets and engine displacements. While diesel units have a marginally smaller fuel cost per litre than gasoline units, their repair costs are trending upwards as these assets age (based on current performance).

2004 Fuel consumption by vehicle fleet – litres



Integrated vegetation management

To ensure the safe operation of SaskPower's more than 150,000 km of transmission and distribution lines, the Corporation maintains vegetation along all power line rights-of-way. These corridors can vary in width from 10-70 metres, depending on the size of the power line and height of the surrounding vegetation.

SaskPower's Integrated Vegetation Management Policy includes a number of methods for removing plant species in transmission and distribution line rights-of-way, while also encouraging the establishment of plant species that provide important wildlife habitat. Mechanical methods, seeded and naturally occurring native vegetation, as well as selective herbicide use are included in the array of options used by the Corporation. Because of the lower long-term costs associated with an integrated approach, this policy brings economic as well as environmental benefits.

By using integrated vegetation management practices to promote the development of low-growing vegetation, we reduce the possibility of branches falling across a line during a storm, which can cause damage and interrupt electrical service. In forested areas, if trees come into contact with high voltage lines, they could cause forest fires.

In 2004, SaskPower continued to work cooperatively with rural municipalities and individual landowners to establish a database of organic farmlands across Saskatchewan, which will ensure herbicides are not used in power line rights-of-way that are adjacent to organic lands. New Dutch elm disease regulations are expected to come into effect across Saskatchewan in 2005. SaskPower has been part of the development of the new regulations, as an ex-officio board member of the Saskatchewan Dutch Elm Disease Association (SDEDA). Training for SaskPower staff working in

vegetation management is currently in development to ensure that SaskPower helps prevent the spread of Dutch elm disease in the province. SaskPower also provided financial support to the SDEDA's annual workshop, which was attended by SaskPower staff who are responsible for trimming Dutch elm trees across the province.

Reclamation

Our reclamation work on recently-constructed transmission lines focuses on returning the corridor to a near-natural state. Survey work was completed on the ML3 Stage 3 Transmission Line in 2004 to determine future reclamation needs. Phases 1 and 2 had already been reviewed. Meanwhile, a survey of W2T Phase 2 (previously known as PA8 Phase 2) was completed in 2004 to determine future reclamation needs. To date, none have been identified. Survey work will continue in the summer of 2005.

Environmental studies

The W2T Phase 2 (PA8 Phase 2) cowbird study continued through 2004 and will be completed in 2005. It is evaluating the impact that cowbirds might have on the local songbird population by laying cowbird eggs in the nests of songbirds, leading to the death of songbird chicks.

Zero G

Zero G – a program highlighting SaskPower's goal of zero garbage – was established in 1993 as a comprehensive waste management and resource recovery program. It is in place at the Corporation's offices and facilities across Saskatchewan. One of the biggest Zero G successes is our corporate paper and cardboard recycling program. During the last year, SaskPower recycled over 58,000 kilograms of waste paper from facilities in the Regina area, including Head Office.

Throughout the growth and evolution of Zero G, SaskPower has discovered that many of the items used in day-to-day operations were not included in existing recycling programs. Whenever possible, we have responded by developing new recycling programs, either on our own or in partnership with other organizations. Today, Zero G includes recycling programs for materials as diverse as aerosol cans, oily rags, used oil, solvents, antifreeze, batteries, printer cartridges, phone books, plastic bags, metals and organic matter.

Zero G in our community

Ongoing education about the importance of waste reduction is central to Zero G. To achieve this goal, we're taking our program beyond SaskPower's operations into our community.

- In cooperation with the City of Regina and the Saskatchewan Roughriders, the Green the Park Program promotes the recycling of plastic cups at Taylor Field. About 80 per cent of all cups used at the stadium – approximately 200,000 – are recycled annually.
- SaskPower has joined forces with the Regina and District Food Bank in the thINK FOOD program, which recycles laser and inkjet cartridges from the Corporation's offices as part of a Canada-wide initiative. The program also raises much-needed funds for Saskatchewan food banks.
- SaskPower provides financial support to the Saskatchewan Waste Reduction Council, which delivers public education initiatives during Waste Reduction Week each fall.
- As part of a corporate partnership with St. Catherine School in Regina, grade five students assist with a waste audit at SaskPower's Head Office each spring, giving participating youth firsthand knowledge of the positive environmental impact that comes from recycling and waste diversion.

In particular, wire formerly used in transmission and distribution lines is now being collected from SaskPower and sent to Saskatchewan Abilities Council workshops. Staff at the workshops strip insulation from the wire and return it to SaskPower, so it can be sold to salvage companies. This partnership not only reduces waste, but also increases the financial value of the wire and provides employment opportunities. Scrap metal from a variety of SaskPower work locations is also centrally collected and sorted according to its composition and potential for reuse, before being sold.

Procurement

The environmental implications of the procurement of goods and services are an integral part of all decision-making at SaskPower. Corporate guidelines help to ensure that environmentally appropriate products are acquired. As well, contractors providing goods or services to SaskPower must meet the requirements of our EMS.

Electric and magnetic fields (EMF)

Since 1972, the scientific community has been studying the potential health effects of EMF. Extensive research has not yet established a clear risk resulting from exposure. However, research continues into the possible relationship between EMF and certain human diseases. These efforts are focused on determining any health impacts by long-term low level exposure to EMF, and particularly magnetic fields. Both epidemiological and laboratory studies are included in efforts to quantify health effects.

SaskPower believes acknowledging and addressing concerns regarding EMF is important, and continues to share information with customers. Upon request, the Corporation will measure and report on EMF in residential, commercial or public buildings, or assist customers wishing to take their own measurements. SaskPower staff also estimate EMF levels for proposed electrical facilities, such as transmission lines. As a member of the Canadian Electricity Association (CEA), SaskPower monitors research into EMF conducted by universities, government and other scientific bodies.

SaskPower Shand Greenhouse

Since 1991, the SaskPower Shand Greenhouse has been using waste heat from the nearby Shand Power Station to grow millions of tree, grass and shrub seedlings that have been distributed to community and non-profit groups for use in land reclamation and other environmental planting projects. In 2004, much effort at the greenhouse was dedicated to the Western Red Lily Centennial Project.

The lily's bright splash of colour is an increasingly rare sight as few areas of undisturbed native habitat remain part of our province's landscape. Innovative research has been underway since 2001 at the greenhouse to develop methods for the mass propagation of lilies under greenhouse conditions. Studies include three main stages: seed germination, acceleration of plant growth and survival after transplanting. It is estimated that more than 85,000 Western red lilies will be available for provincial centennial celebrations in 2005, as a result of this massive research initiative.

Constructed wetland

The SaskPower constructed wetland, built in 1994 near the Estevan sewage lagoons, is one of the largest of its kind in Canada. Approximately 500,000 cattails were transplanted by hand to the wetland from marsh areas in the Souris River Valley. The wetland is the only one in North America providing cooling water to a power station. As a water source for the Shand Power Station, it is environmentally friendly, cost-efficient and requires little maintenance. The wetland's natural cleansing abilities help lower the City of Estevan's sewage treatment costs, and also eliminate the impact that the city's previous semi-annual discharges had on the Souris River.

In 2004, SaskPower installed new national-park quality interpretive signage at the site to highlight the important role that the wetland plays in conserving habitat, wildlife and waterfowl. Free educational tours of the constructed wetland, led by SaskPower staff, allow visitors to learn more about this natural purification process.

Working with our community partners

We value the opportunity to join community groups in protecting natural spaces. In 2004, SaskPower initiated or continued a number of important alliances.

Nature Saskatchewan SaskPower continues to provide financial support to Nature Saskatchewan's Bird Quest and Plant Quest programs, which facilitate identification training and education on the province's bird and plant species. SaskPower is also playing a part in Nature Saskatchewan's program to conserve the Loggerhead Shrike in Saskatchewan through the provision of buffaloberry seedlings produced at the SaskPower Shand Greenhouse. Another partnership with Nature Saskatchewan is the Adult Osprey Tracking Project, which follows the path of an osprey to its wintering area using a solar-assisted transmitter.

Western Hemisphere Shorebird Reserve Network One of Saskatchewan's Western Hemisphere Shorebird Reserve Network sites is located in the Quill Lakes area in east-central Saskatchewan. It is home to many rare and endangered migratory birds, such as the peregrine falcon, ferruginous hawk, piping plover, Baird's sparrow and whooping crane. SaskPower is supplying solar-powered water pumps to support the ongoing operation of the Shorebird Reserve. These pumps provide an alternate source of water for four nearby rangeland pastures, which allows the Quill Lakes ecosystem to thrive and support bird life.

Saskatchewan Wildlife Federation Youth Leadership Program Through a stay at a unique camp in northern Saskatchewan – supported in part through SaskPower sponsorship – this program gives young people from across the province a chance to learn more about the importance of environmental stewardship.

Clean Team Thanks to an ongoing partnership between SaskPower and the Saskatchewan Association of Agricultural Societies and Exhibitions (SAASE), youth Clean Teams at exhibitions and fairs across Saskatchewan are collecting and recycling waste materials on fair grounds during annual exhibitions. In 2004, 15,707 bags of trash were collected, with 1,341 bags of recyclables diverted from landfills.

Communities in Bloom SaskPower and the Saskatchewan Parks and Recreation Association are collaborating to deliver Communities in Bloom, which encourages towns and cities to engage in a municipal beautification program that could lead to national recognition for their efforts.

Saskatchewan Prairie Conservation Action Plan (PCAP) SaskPower is a partner in PCAP, which consists of 25 groups representing industry, federal and provincial government agencies, several non-government organizations and Saskatchewan's two universities. PCAP's vision is to ensure native prairie is sustained in a healthy state. SaskPower is the only industry-related member in PCAP.

Native Plant Society of Saskatchewan In 2004, SaskPower continued an ongoing sponsorship of the Native Plant Society for the establishment and care of the Regina Plains Nursery, which produces native plant seed used for restoration projects.

Wood pole project

There are an estimated 1.5 million treated wood power poles presently in service in Saskatchewan. Through the *Canadian Environmental Protection Act* (CEPA), the federal government has initiated a program for the elimination or lifecycle management of several substances in wood preservatives. SaskPower is participating with the CEA in the development of a response to these proposed regulations.

Species at Risk Act (SARA)

On June 1, 2004, the federal *Species at Risk Act* (SARA) came into force, protecting listed plant and animal species found on federal lands as well as their critical habitat. As a member of the CEA, SaskPower has been active in providing input into national policy development related to the implementation of the *Act*. The SARA-listed species of most immediate concern to SaskPower is the piping plover, with only an estimated 6,000 remaining in the world.

SaskPower is continuing its work to preserve piping plovers through collaborative efforts with government and non-governmental organizations at Lake Diefenbaker – the site of one of the largest single site breeding grounds for the Northern Great Plains population. SaskPower's Coteau Creek Hydroelectric Station is also located on Lake Diefenbaker, meaning that water management for various interests – including hydroelectricity production – can come into conflict with piping plover nesting and brooding requirements. Rising water levels due to water management activities can result in flooded nests and significant loss of brood-rearing habitat.

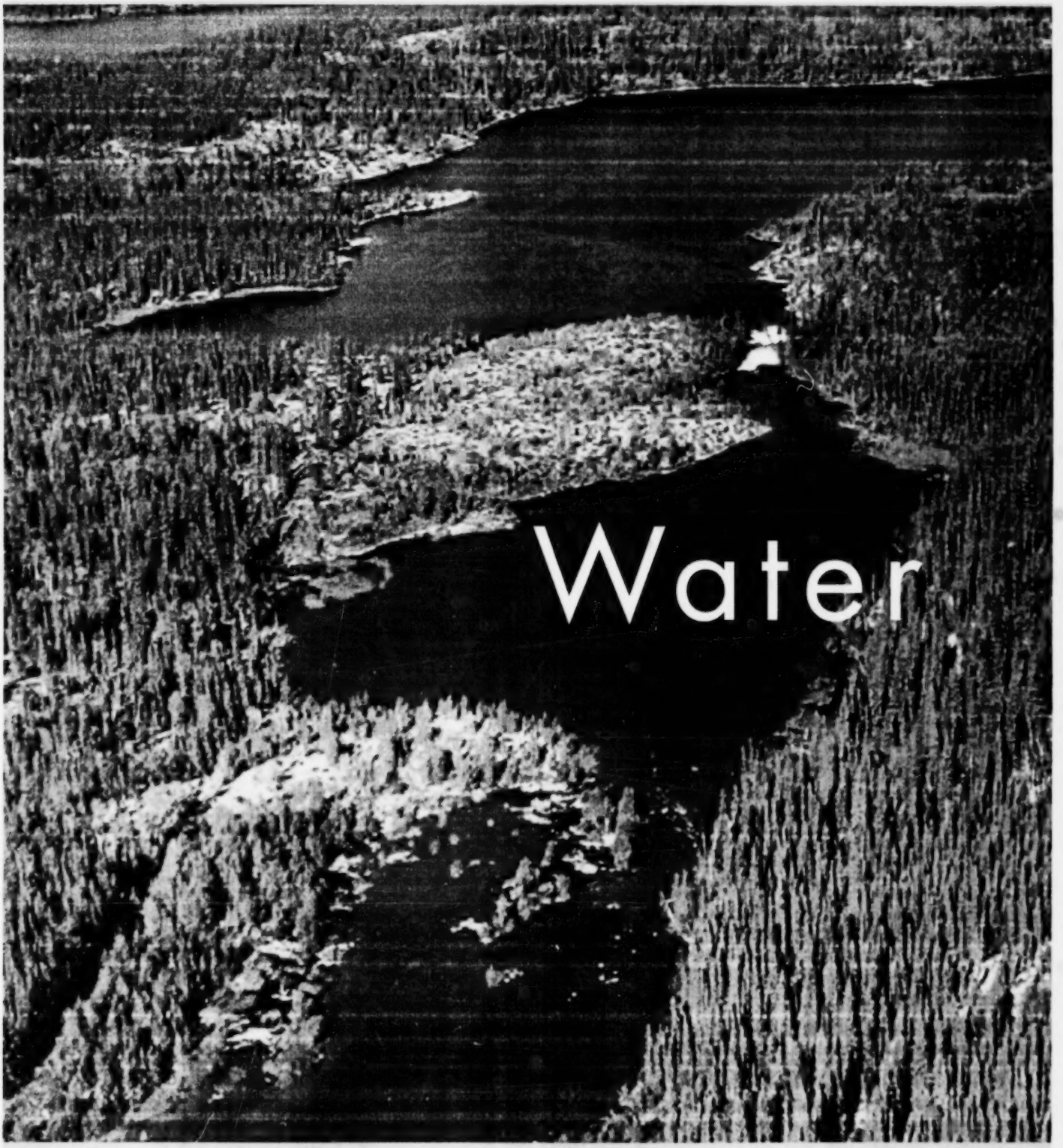
As a result, SaskPower has been working proactively with other agencies to finalize the South Saskatchewan River Piping Plover Conservation Plan. Under this arrangement, SaskPower provides funding assistance for plover monitoring, predator exclosures and a public education and outreach program (Nature Saskatchewan Guardian Program). SaskPower is also a member of the Prairie Piping Plover Recovery Team, a multi-organization group which is responsible for developing a recovery strategy for piping plover.

In addition to the management of specific species, all new SaskPower distribution, transmission and generation projects within Saskatchewan are screened through an environmental database and Geographic Information System (GIS). They reference species at risk listed both provincially and federally, as well as significant natural areas and habitat. SaskPower project development may also include on-the-ground environmental studies to verify species at risk if their presence cannot be verified by other means.

Ducks Unlimited and SaskPower

As part of our Diamond Legacy sponsorship, SaskPower contributes approximately $115,000 annually to Ducks Unlimited Canada (DUC). Through SaskPower's partnership with DUC, wildlife habitat conservation, research and education programs have been developed across Saskatchewan. In 2004, the sponsorship was directed to four programs:

- The Winter Cereal Core Grower Program, which increases wildlife habitat by promoting the amount of winter cereals being sown.
- The Saskatchewan Wetland Education Program, which used classroom presentations and field trips to reach over 5,000 children in 240 classrooms.
- The development of communication materials and outreach programs to encourage the establishment of conservation easements.
- Salinity Plantings for Watershed Health, which promotes landowner conversion of marginal lands into perennial cover – especially in flood prone areas – to protect water quality.


Water

Managing provincial fisheries

SaskPower continues to work with the Canadian Electricity Association (CEA) on a compliance framework being developed with Fisheries and Oceans Canada (DFO) as part of a memorandum of understanding between the organizations. It is expected this will bring clarity and consistency nationally on the application of the *Fisheries Act* to hydroelectric facilities. In 2004, progress was made in the development of interpretation bulletins on fish passage and flow modification.

SaskPower has also been collaborating with DFO to assess entrainment – when fish are drawn into water intakes – at our thermal stations. A report of work done at the Queen Elizabeth Power Station was completed in 2004, while tours were provided to DFO staff at our three coal-fired stations to assess potential risks. Work on this issue will continue in 2005.

Saskatchewan River Sturgeon Management Board (SRSMB)

SaskPower was one of the founding members of the SRSMB and continues as an active member. The mandate of the group is to prevent the further decline of lake sturgeon in the Saskatchewan River, downstream of E.B. Campbell Hydroelectric Station. In 2004, SaskPower funded the development of an education presentation – *Sturgeon in the Schools* – and a portion of the fall index fishing program.

Zebra mussels

Zebra mussels are an invasive species that can damage ecosystems and water intake structures. In 2004, SaskPower brought together a number of provincial agencies to develop educational activities in order to alert the public about the dangers of zebra mussels. Efforts specifically highlighted the importance of cleaning boats to help prevent the spread of zebra mussels into Saskatchewan waters. SaskPower continues to monitor for zebra mussel presence in water systems at our generating stations.

Renewable energy

SaskPower is in the midst of an ambitious program that will see the investment of significant resources into its hydroelectric operations, in order to ensure they continue to provide a clean source of electricity well into the future. In 2003, Nipawin Hydroelectric Station Unit #1 had a complete rebuild, which improved its performance throughout 2004. This year, Unit #3 underwent a complete rebuild, while Unit #2 is scheduled for a complete rebuild in 2005.

Nipawin Hydroelectric Station

EXPLORING THE WATERS OF RESEARCH

SaskPower is undertaking a cooperative research project with Fisheries and Oceans Canada (DFO) that will collect biological data and use computer modeling to compare possible operating scenarios at E.B. Campbell Hydroelectric Station, located near Nipawin, Saskatchewan. The study will determine their effects on downstream fish and fish habitat on the Saskatchewan River.

"E.B. Campbell is challenging because it is a hydropeaking facility, and flows can vary based on energy demand," says Marcy Bast, environmental advisor, SaskPower. "Over the next two years, we'll work collaboratively with other agencies to assess downstream fish and fish habitat in relation to changing discharge flows."

Marcy is a biologist in SaskPower's Environmental Programs department. She will be central in coordinating the expertise of participants and undertaking the work for this project. The study is complex and will involve extensive field data collection, computer modeling and economic analysis.

"We'll be collecting a variety of physical data, such as water depth and velocities," Marcy explains. "This data and biological information will be plugged into a computer-based hydraulic model that will allow us to alter conditions, illustrating the effects from varying water flows out of E.B. Campbell."

Says Marcy: "This is an important project for SaskPower, because it will provide a greater understanding of our operational relationship with fish and fish habitat. I think this demonstrates our interest in working cooperatively with regulators to identify key issues and possible management plans."

Public accountability and reporting

Consultation

Engaging in two-way dialogue with our customers and community reflects a key corporate value at SaskPower – displaying openness in everything we do. The Corporation consults with a wide variety of stakeholders on a diverse range of environmental issues. Whether we are beginning work to construct a new facility or improve an existing one, public involvement is a central component of our efforts.

Our programs typically include early contact with local officials, distribution of detailed project information, open house sessions, meetings with individuals and interest groups, media releases, advertisements, and direct correspondence and discussion. Results of public participation programs are frequently included in project application and approval processes that are filed with regulators. SaskPower also tracks inquiries in our Environmental Management System (EMS).

In 2004, SaskPower held a variety of public open houses to seek customer feedback on new or ongoing transmission and power production projects, including: the 150-MW wind power project at Rushlake Creek; Parkridge Transmission Line; and TC5 Stage 2 Transmission Line. SaskPower also undertook public consultation on the La Ronge Biomass Gasification Project.

Outside of our formal public consultation process, SaskPower maintains ongoing dialogue with a wide variety of key stakeholders, including: Saskatchewan Environment; Fisheries and Oceans Canada (DFO); Saskatchewan Environmental Society; the provincial Office of Energy Conservation; and the Canadian Electricity Association (CEA). In addition, we maintain ongoing dialogue with stakeholders in centres where we conduct operations.

Looking ahead, SaskPower is evaluating the need for a broad-based, multi-audience public education program, which would help customers understand the Corporation's need to renew or replace many of its larger generation units in the years ahead.

The program would aim to help customers understand how environmental concerns – as well as cost and reliability factors – are all considered as part of SaskPower's sustainable supply planning process. Highlighting the transparent and technology neutral nature of our decision-making process is essential if key industry and environmental stakeholders are to accept and support future generation supply choices.

Reporting on our activities

Communicating in an open and transparent fashion with our stakeholders, shareholders and customers is critical as we strive to maintain relationships characterized by trust. SaskPower reports on environmental activities in such a way that our efforts can be judged against past performance, and also compared on an equal footing with efforts by corporations in other jurisdictions.

- We report annually to our customers, shareholder and stakeholders through this *Environment Report*.
- We file an annual *Environmental Commitment and Responsibility Program* report with the CEA.
- We participate in the compilation of the *Saskatchewan State of the Environment Report*.
- We report annual greenhouse gas (GHG) emissions to Statistics Canada.

Our performance

Canadian Electricity Association (CEA) Environmental Commitment and Responsibility (ECR) Program

The CEA ECR Program reports industry-wide on efficiencies and environmental impacts. CEA ECR Program data for 2004 was not available at the time of printing.

	2004	2003		2002		2001		2000	
1. Efficiencies - %	SaskPower	CEA	SaskPower	CEA	SaskPower	CEA	SaskPower	CEA	SaskPower
Internal energy efficiency									
Generation	**94.1**	97.4	94.6	97.6	93.6	97.5	93.3	97.4	93.6
Transmission	**95.5**	96.2	95.8	96.0	95.2	96.0	95.4	95.8	95.0
Distribution	**95.0**	96.0	95.3	95.8	94.8	95.8	95.0	95.4	94.4
Energy conversion efficiency for fossil-based generation [A]	**30.7**	33.7	30.9	33.3	30.3	34.5	31.5	33.4	31.3
Flyash use [B]	**7.39**	22.49	6.86	24.8	6.7	24.8	6.1	21.5	4.9
Insulating oil reuse	**81.4**	67.2	80.3	74.3	87.1	77.7	71.3	77.2	80.6
2. Reduction of environmental impacts									
Mass net carbon dioxide per unit of fossil generation (kg/kWh)[C]	**.838**	.95	1.03	0.89	1.07	0.83	1.08	0.73	1.06
Mass net sulphur dioxide per unit of net fossil generation (g/kWh)[C]	**6.82**	4.91	7.24	4.88	7.73	4.77	7.92	4.86	7.51
Mass net nitrogen oxides per unit of net fossil generation (g/kWh)[C]	**2.57**	1.84	2.50	1.79	2.79	1.73	2.89	1.82	2.99
Reportable spills [D]	**23**	1,100	14	1,173	22	1,167	12	904	23
Priority spills [E]	**2**	70	1	82	2	87	0	74	3
PCB in storage (tonnes) [F]									
High level	**0**	44	1	55.3	2	104	9	116	4
Low level	**1**	806	13	1,014	31	849	15	863	31
PCB sent for destruction (tonnes)									
High and low level	**30**	1678.6	42	733.8	38	1,703	38	1,939	73

A Slightly lower efficiencies for SaskPower are due, in part, to the operation of older, yet reliable and cost-effective, generating facilities.

B The average percentages for flyash use are dependent on the proportion of coal-fired generation by CEA members and their proximity to markets for flyash.

C Includes 100 per cent of emissions from Cory Cogeneration Station in 2004.

D The data reported through the ECR Program for reportable and priority spills, as well as PCBs in storage and sent for destruction, are representative of the overall totals of all Canadian utilities (including SaskPower) that have been participating in this industry-wide program. ECR criteria for reportable spills differs from the definition of reportable spills included in provincial legislation. Data meeting provincial criteria is found on page 21.

E In compliance with the CEA ECR Program reporting guidelines, a priority spill is one involving a substance that is a petroleum product or PCB-contaminated, and either one of the following: a spill with a volume greater than 500 litres or a spilled substance that enters a waterbody.

F According to the ECR Program guidelines, "high level" PCB material is defined as any material (including equipment) with a PCB concentration greater than 1 per cent (10,000 ppm). "low level" PCB material is defined as any material (including equipment) with a PCB concentration of greater than 50 ppm but less than 10,000 ppm.

Our environment policy

SaskPower is committed to protecting the environment while providing our customers with safe, reliable and cost-effective sources of electricity.

Our commitment to environmental responsibility

SaskPower has adopted the following principles to help safeguard Saskatchewan's natural resources, systems and diversity:

- Compliance with relevant environmental legislation, regulations and corporate environmental commitments
- Continual improvement of environmental management systems
- Prevention of pollution

In keeping with these principles, SaskPower is committed to:

Accountability Provide the public with an annual review of our environmental performance and environmental management programs.

Conservation Implement the fundamentals of waste management: rethink, reduce, reuse, recycle and recover.

Evaluation Audit our environmental performance regularly, including auditing for compliance with the ISO 14001 Standard for Environmental Management.

Goals Establish and maintain environmental objectives and targets.

Innovation Identify opportunities for continual improvement and implement cost-effective, environmentally responsible technologies and improved management practices.

Integration Integrate environmental considerations into all capital planning and purchasing decisions.

Partnerships Ensure all employees and contractors are aware of and fulfill their environmental roles and responsibilities.

Protection Identify, monitor and manage all significant environmental aspects associated with our operations and services.

System map

Generation

Hydroelectric

1. **Athabasca Hydroelectric System** - 23 MW
   - Wellington (5 MW)
   - Waterloo (8 MW)
   - Charlot River (10 MW)
2. **Island Falls Hydroelectric Station** - 101 MW
4. **E. B. Campbell Hydroelectric Station** - 288 MW
5. **Nipawin Hydroelectric Station** - 255 MW
10. **Coteau Creek Hydroelectric Station** - 186 MW

Natural Gas

3. **Meadow Lake Power Station** - 44 MW
7. **Landis Power Station** - 79 MW
8. **Queen Elizabeth Power Station** - 386 MW
11. **Success Power Station** - 30 MW

Wind

12. **Rushlake Creek Wind Power Project** - 150 MW *(under construction)*
14. **Cypress Wind Power Facility** - 11 MW

Coal

15. **Poplar River Power Station** - 562 MW
16. **Boundary Dam Power Station** - 812 MW
17. **Shand Power Station** - 279 MW

Independent Power Producer

9. **Meridian Cogeneration Station** - 210 MW
13. **Cory Cogeneration Station** - 228 MW
18. **SunBridge Wind Power Project** - 11 MW

Transmission

- 230 kV
- 138 kV
- 138 kV line operating at 72 kV
- Switching Station
- Interconnection

Generation and transmission system

Net generation (GWh)

	2004	2003	2002	2001	2000
Fossil	**14,370***	14,044*	12,659	12,509	12,360
Hydro	**2,746**	3,416	2,836	2,391	3,046
Wind	**35**	20	4	0	0
Total	**17,151**	17,299	15,499	14,899	15,406

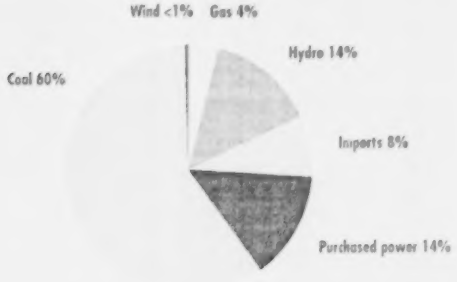
* Includes power purchased from the Cory Cogeneration Station.

Transmission and distribution lines (pole km)

	2004	2003	2002	2001	2000
Transmission (72 kV – 230 kV)	**12,149**	12,104	12,026	12,290	12,388
Distribution (14.4 kV – 25 kV)	**141,408**	140,733	140,084	139,460	138,859

• Historically, line kilometres were estimated; the recent use of satellite mapping systems has resulted in more accurate data.

2004 Generation and purchased power by type - %



Glossary

Amine scrubbing Removal of CO_2 from flue gases using solvents that rely on chemical or physical absorption.

Biogas Methane created from the decomposition of organic matter such as manure or landfill waste, can be used to power engines to generate heat and electricity.

Biomass Energy resources derived from organic matter. These include wood, agricultural waste and other living-cell material that can be burned to produce heat energy.

Cogeneration Simultaneous production of heat energy and electrical power from the same fuel in the same facility. The use of waste heat (such as steam) from an industrial process to produce electricity, or the use of the steam or hot water from electric power generation as a heating source.

Chromium A metallic chemical element naturally occurring in soils that can be found as a component in a variety of industrial applications.

Distribution Process of moving electric energy at lower voltages from major substations to customers.

EcoLogo The registered trademark of Environment Canada's Environmental Choice Program. An independent firm evaluates the product applications and certifies the products that qualify as low-impact renewable electricity.

Electric fields Invisible fields of force created by electric voltage, measured in volts/metre (V/m).

Electrostatic precipitator (ESP) A device for removing particles of ash, dust, smoke and other elements from air and gas flows.

Environmental Management System (EMS) Part of an overall management system which includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing and maintaining an environmental policy.

Flyash Fine powder resulting from the combustion of pulverized coal used in many coal-fired generating stations.

Fossil-based generation Includes coal and natural gas fired generation of electricity.

Gigawatt Hour (GWh) A unit of bulk energy; 1,000,000 kilowatt hours.

GreenPower An EcoLogo-certified product offered by SaskPower that provides customers with the opportunity to purchase blocks of electricity produced from renewable resources with little or no environmental impact.

Greenhouse gas (GHG) Naturally occurring gases such as carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) that trap heat in the earth's lower atmosphere.

ISO 14001 A standard that defines the elements of a sound environmental management system. The ISO 14000 Series is a family of environmental management standards developed by the International Organization for Standardization (ISO).

Kilovolt (kV) A unit of pressure, or push, of an electric current: 1,000 volts.

Kilowatt hour (kWh) A unit of bulk energy; 1,000 watt hours. The measurement is generally used for billing residential customers.

Kyoto Protocol An international agreement, reached in 1997 in Kyoto, Japan, by parties subject to the United Nations Framework Convention on Climate Change (UNFCCC). The agreement extends the commitments of the UNFCCC by establishing greenhouse gas emission targets for participating developed countries.

Landfarming A remediation method in which contaminated soils are periodically turned over or tilled to aerate the soil and encourage microbial activity, which breaks down the contaminants.

Lignite A low-grade coal, intermediate between peat and bituminous, lignite has the lowest energy content among the various grades.

Magnetic fields Invisible fields of force created by electric current, measured in microtesla (mT) or milligauss (mG).

Megawatt (MW) A unit of bulk power; 1,000 kilowatts. The output of a commercial generator or power station is usually expressed in megawatts.

Oxy fuel process Combustion in the presence of oxygen, which results in a flue gas containing almost exclusively water and carbon dioxide.

Particulate matter Emissions of ash particles from the burning of fossil fuels.

Polychlorinated biphenyls (PCBs) A group of organic compounds that were once used as cooling and insulating fluids in various types of electrical equipment, including transformers and capacitors.

Transmission Process of moving electric power in bulk at higher voltages from the source of supply to distribution centres.

Our strategic direction

Vision: Excelling in competitive energy markets.

Mission: We deliver power in a safe, reliable, cost-effective and environmentally responsible manner.

Values: We are committed to respect, integrity and openness in all we do.

Contact us

We value your feedback and involvement. To learn more about our programs and initiatives, please visit us online at saskpower.com or contact:

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8 trees

26,101 litres of water

644 kg reduced net greenhouse emissions

2127 kg wood

332 kg reduced landfill waste

9,336 (BTU) (000) reduced energy

SaskPower